Patients' subjective perspective on recovery orientation on an acute psychiatric unit

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Abstract: Background : Evaluations of the recovery orientation of mental health services have focused on outpatient and rehabilitative rather than acute inpatient facilities. Aim : This naturalistic observational study seeks to evaluate the subjective perspective and functional outcome of inpatients before and after structural alterations. The changes made were the introduction of treatment conferences and conjoint treatment planning, reduction of the total time spent on reports about patients (in their absence), and recovery-oriented staff training on an acute psychiatric unit of the University Hospital of Psychiatry, Zurich, Switzerland. Methods : During 1 year (2011/2012) eligible patients on the study unit were interviewed on a voluntary basis using established instruments to assess several recovery-relevant aspects. Two different samples (before and after the project; n 34 and n 29) were compared with regard to subjective parameters (e.g. patients ' attitudes toward recovery, quality of life, perceived coercion, treatment satisfaction, and hope), clinical and socio-demographic basic data, as well as the functional outcome according to the Health of the Nation Outcome Scales (HoNOS). Results: Some patient attitudes towards recovery and their self-assessment of the recovery process improved during the study. Other subjective parameters remained stable between samples. Functional outcome was better in subjects who were treated after the implementation of the new concept. The length of stay remained unchanged. Conclusions: The implementation of recovery-oriented structures and providing the necessary theoretical underpinning on an acute psychiatric unit is feasible and can have an impact on attitudes and knowledge of personal recovery.

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Abstract

Background: Evaluations of the recovery orientation of mental health services have focused on outpatient and rehabilitative rather than acute inpatient facilities. *Aim*: This naturalistic observational study seeks to evaluate the subjective perspective and functional outcome of inpatients before and after structural alterations. The changes made were the introduction of treatment conferences and conjoint treatment planning, reduction of the total time spent on reports about patients (in their absence), and recovery-oriented staff training on an acute psychiatric unit of the University Hospital of Psychiatry, Zurich, Switzerland. *Methods*: During one year (2011/2012) eligible patients on the study unit were interviewed on a voluntary basis using established instruments to assess several recovery-relevant aspects. Two different samples (before and after the project; N=34 and N=29) were compared with regard to subjective parameters (e.g., patients' attitudes toward recovery, quality of life, perceived coercion, treatment satisfaction, and hope), clinical and sociodemographic basic data, as well as the functional outcome according to the Health of the Nation Outcome Scales (HoNOS). *Results:* Some patient attitudes towards recovery and their self-assessment of the recovery process improved during the study. Other subjective parameters remained stable between samples. Functional outcome was better in subjects who were treated after the implementation of the new concept. The length of stay remained unchanged. *Conclusions:* The implementation of recovery-oriented structures and providing the necessary theoretical underpinning on an acute psychiatric unit is feasible and can have an impact on attitudes and knowledge of personal recovery.

Keywords: Recovery-orientation, acute inpatient treatment, severe mental disorder, subjective outcome parameters

Background

The conceptual framework of recovery from mental illness has been extensively described in recent publications concerning multiple aspects on an individual level, such as characteristics of the recovery journey, recovery processes, and stages (1, 2). Recovery can be defined as an individual process of personal growth, including the increase of hope, satisfaction, self-identity, meaning in life, and personal responsibility, when limitations caused by the mental illness remain (3, 4). Though recovery constitutes an individual process, it can only unfold within social and interpersonal context (5). From the perspective of professionals in mental health care, there is still a considerable lack of clarity about what constitutes recovery-oriented services (6). A recent review of qualitative studies proposed an overarching framework to transform mental health services towards recovery-orientation (7). The authors suggested four practice domains in order to summarize the 16 dominant themes identified in the review: organizational commitment, promoting citizenship, supporting personally defined recovery, and working relationship. While the first two dimensions comprise institutional attitudes, concepts, and therapeutic interventions, the latter domains focus on the therapeutic attitude towards psychiatric patients, and in particular on patient individuality, informed choice, focusing on strengths, partnership, inspiring hope, and holistic approach (7). Publications on implementation and encouragement of recovery-orientation in mental health services focus mostly on organizational issues (7) and on community-based treatment settings.

Factors that facilitate implementation of recovery in mental health services comprise, amongst others, effective training and committed staff (8). Studies of recovery-oriented staff training in community-based settings have shown positive changes in staff attitudes (9). Evaluations of the recovery-orientation of mental health services have focused on outpatient and rehabilitative facilities rather than inpatient facilities (10, 11). Moreover, the recovery-

orientation among staff in psychiatric hospitals appears to be lower than that in community settings (12, 13). This might be related to the more restrictive treatment setting and the hierarchic structures in hospital psychiatry (12).

Aims

The purpose of this clinical project was to foster recovery-orientation on an acute psychiatric unit by strengthening the subjective perspective of patients within the working relationship (14-16). One major part of the project was to successively restructure organizational processes (introduction of treatment conferences and conjoint treatment planning, reduction of the total time of reports on patients in their absence). The goal was to enhance transparency and patients' involvement. The second part was theoretical staff training on recovery-orientation and related concepts, and case-related supervision. The aim of the naturalistic observational study was to investigate the impact of alterations in organizational routines and the training of the multidisciplinary team on the subjective perspective of patients treated on this unit with respect to satisfaction with treatment, therapeutic relationship, and recovery-relevant aspects, such as optimism, hope, autonomy and quality of life. We hypothesised that patients who were treated on this unit after the structural alterations and staff training would be more positive concerning these subjective parameters.

Materials and Methods

Study Unit

Inpatient units in the University Hospital of Psychiatry in Zurich provide 15 to 22 beds each for acute diagnostics and treatment of individuals between 18 and 65 years of age and any psychiatric diagnoses. The average duration of stay was 25 days in 2011. The study unit is one out of eight units and operates 16 beds and 1 seclusion room, and can be closed if

necessary. It provides acute treatment for all psychiatric disorders of adult individuals. There were 220 persons admitted in 2011, 50 per cent of the patients were admitted involuntarily, 58 per cent of all admitted patients were female and the mean age was 39 years. The multidisciplinary team consisted of nursing staff equivalent to 15 full-time positions, 3 physicians (1 psychiatrist, 2 interns), a social worker as well as occupational, vocational, and physical therapists, all of them working part-time. Before the project, organizational standard processes without patients comprised 30-minute staff reports with nursing and medical staff on weekday mornings and one report per week with participation of all other staff (60 minutes). Routines including patient participation were unit rounds with the senior psychiatrist once per week, and an initial visit of the psychiatrist after intake that included treatment planning. The goals of the hospitalization were discussed with the patient and were documented in the medical records, but the reports were not given to the patient in written form. Occupational, vocational, and physical therapists, as well as social workers reported on the progress of their work without the patients. The team discussed new treatment goals and, subsequently informed the patient.

Clinical Project

This project follows a bottom-up approach based on a single unit's attempt to optimize the multiprofessional team's attitudes and organizational structures. In contrast, a top-down procedure would rely on institutional changes that are induced and regulated on an organizational level. The following structural components were introduced successively at the start of the project in September 2011 and continuing through January 2012, in order to enhance involvement of patients in clinical routines. The goal of these alterations was to provide structures that would be beneficial for patients' recovery-related empowerment, autonomy and personal responsibility.

- Reports on patients (in their absence) were reduced from 100 minutes per week to a total of 75 minutes per week (15-minute briefings on weekday mornings). The purpose of these meetings was to discuss recent developments and to coordinate subsequent steps in the treatment of patients.
- A new treatment planning conference was implemented, with the patient and his or her doctor and nurse participating. Goals were established and written treatment plans were agreed upon. Patients were encouraged first to name their personal goals for the hospitalization, then goals that were specified in the admission form (particularly in the case of patients who were involuntarily admitted) were discussed with the patients and were included in the treatment plan. The purpose of treatment planning was always to receive informed consent from the patient or at least to respect his or her concerns over treatment goals that arose from the situation leading to (involuntary) admission. Before the project, treatment planning was informally integrated in intake procedures, and was documented in clinical records by the intern and nursing staff. A written treatment plan with documentation of informed consent of the patients was not implemented.
- Treatment conferences which were introduced in order to evaluate treatment progress, included participation of the patient and all involved professionals. This structure replaced the weekly multiprofessional meeting in which progress of and problems with therapies were discussed in the absence of the patient. Every patient was scheduled within one week after admission and then every three weeks for treatment conferences. Since the mean duration of stay was 25 days, this implies that most of the patients had only one or two treatment conferences. However, in weeks without scheduled conferences, treatment progress was evaluated within regular unit rounds with physician and nurse only. If necessary, goals were adjusted.
- Owing to structured treatment planning and routine evaluation of treatment progress within treatment conferences and regular unit rounds, the total time of unit rounds and treatment

conferences could be reduced by one quarter, to about 180 minutes per week. The total time saved attributable to restructuring of organizational processes was more than two hours per week. This time was now available for all staff members to see patients individually.

The second part of the project was an educational curriculum on conceptual and practical aspects of recovery, which was compulsory for all staff of the study unit. The training concerned general and inspirational, rather than specific or practical issues (17). The structural alterations and topics of the staff training were compiled on the basis of practice guidelines for recovery-orientation (18). The agenda comprised conceptual aspects of recovery (dimensions of recovery in general (clinical, personal, social, etc.), characteristics of the recovery journey, recovery processes and stages), optimism and hope, autonomy, choice, and the therapeutic relationship within restrictive acute inpatient settings. In April 2012 an experienced psychologist conducted the training within 14 hours on three days. Staff members were instructed to reflect on the subject in daily routine, especially within the establishment of working relationships with patients. There was a follow-up training of 4 hours in October 2012. The training was based on guidelines of recovery-oriented care, but without creating a manual. The theoretical background of recovery concepts, according to review articles (1, 2, 18), was presented and transferred to specific clinical cases. Key aspects of the training were fostering hope and optimism, factors that might enhance or decrease perceived autonomy, and establishing a therapeutic alliance that relies on the concept of shared decision making.
The goal of the staff training was to enhance person-centred therapeutic attitudes in light of the above-mentioned recovery-related concepts. The previous treatment rationale on the unit was standard acute psychiatric care, including psychosocial aspects based on the medical model, as well as rehabilitative notions with the explicit goals of symptom reduction and enhancement of functioning. Although notions of recovery-orientation were known to some

staff members and the attitude of nursing staff was supportive and caring, the explicit goal of improving subjective parameters of patients and the recovery process in the first place was new to the multidisciplinary team. The alterations of staff attitudes during the project were also evaluated and published elsewhere (19).

Study Design and Procedures

An observational evaluation was conducted during the implementation of the clinical project (September 2011 to October 2012). All patients admitted to the study unit during recruitment periods were screened for eligibility directly after admission. Inclusion criteria were: age between 18 and 65, sufficient knowledge of the German language, at least one psychiatric diagnosis according to ICD-10 categories F1 to F6. Exclusion criteria comprised delirium, dementia, or a main diagnosis according to ICD-10 categories F7 to F9, and former participation in the interview. All eligible individuals were asked five days to one day before discharge if they were willing to participate in the study. After a complete description of the study to the participants, information about confidentiality of their participation and anonymized data analysis, written informed consent was obtained. Afterwards, participants underwent a structured interview that comprised the questionnaires described below. Interviewers were two medical students and two nursing staff trained simultaneously in use of the questionnaires. The interviewers were not connected to the study unit in any other way. The interviews took 30 to 70 minutes each.

Sociodemographic and clinical parameters, as well as psychosocial functioning were derived from routine data for all eligible patients for the purpose of drop-out analysis. The local ethics committee confirmed the study to be in accordance with the Declaration of Helsinki.

Instruments

Seven subjective parameters with relevance to the recovery process and treatment on the ward were assessed in the interview. Internal consistency was tested for all scales and subscales using Cronbach's alpha. All scales were available in German language from former studies.

- Satisfaction with treatment: the Client Satisfaction Questionnaire (CSQ) consists of 8 items on a 4-point scale (range 0 to 3; alpha=0.86) (20).
- Quality of life: the Manchester Short Assessment of Quality of Life (MANSA), a 16-item instrument, of which 4 items were dichotomized yes/no answers and 12 items were rated on a 7-point scale (range 0 to 6; alpha=0.82) (21).
- Hope: the Integrative Hope Scale (IHS) comprises 23 items (ratings between 0 and 5; alpha=0.92) to evaluate hope (22).
- Perceived coercion: the MacArthur Admission Experience Survey (AES), an instrument of 15 items, each rated on a 5-point scale (range 0 to 4; alpha=0.82) (23).
- Therapeutic relationship: the Scale To Assess Therapeutic Relationship (STAR) (24, 25) was employed twice, once concerning the working relationship with the physician and once with the nurse in charge. It is a 12-item scale with scores ranging from 0 to 4 per item (alpha=0.86).
- Attitudes towards recovery and self-evaluation of the personal recovery process: the 7-item Recovery Attitudes Questionnaire (RAQ) (26) and the Recovery Process Inventory (RPI), a 22-item scale (27) were used for these purposes. The RAQ (alpha=0.57) and the RPI items (alpha=0.83) are rated on a 5-point scale (range 0 to 4). The RAQ can be divided into two factors (factor 1: "recovery is possible and needs faith", alpha=0.62; factor 2: "recovery is difficult and differs among people", alpha=0.28). More details of the psychometric evaluation of the RAQ and RPI may be found elsewhere (28). Owing to low internal consistency, the total scale and the

factors were not applied in the present study, but the single items were used for group comparisons.

The following sociodemographic and clinical characteristics were derived from routine basic documentation: age, gender, diagnoses, number of previous hospitalizations, voluntary or compulsory admission, duration of stay, therapies attended, and decision for discharge (by mutual agreement, against physician's advice, transfer to another unit).

Functional outcome: the Health of the Nation Outcome Scales (HoNOS) (29, 30) was rated by the attending physician at admission and discharge to evaluate problems and functioning. It consists of 12 items rated on 5-point scales (0 to 4). HoNOSdiff was calculated as the difference of HoNOS scores at admission and discharge.

Data Analyses

The data were analysed with IBM SPSS Statistics Version 20 (Statistical Package for the Social Sciences, IBM Corporation, 2011). Descriptive analyses (mean score, standard deviation (SD), percentages) were used to examine clinical and demographic characteristics of the sample. Scales underwent a reliability analysis to determine internal scale consistency by Cronbach's Alpha. All scales and continuous variables appeared to be normally distributed (tested by Q-Q-diagrams, skewness and kurtosis) with the exception of duration of stay and number of previous hospitalisations. Group comparisons were performed using Chi^2-Test for categorical variables and for continuous variables T-Test and Mann-Whitney-U-Test, respectively. The significance level was set at p=0.05 (two-tailed).

Study Samples and Drop-out Analysis

During the study period, 244 patients were admitted to the study unit. 164 individuals (67%) met the inclusion criteria. Basic data were available for 145 patients (88% of eligible

patients), and 81 patients (56% of patients with available basic data) were willing to participate in the interview. Basic data of participants were compared to data of those patients who declined to participate. Sociodemographic and clinical variables of participants compared with drop-outs are displayed in Table 1. 58% of the participants versus 36% of drop-outs were female; duration of stay of the present hospitalization was longer among participants and participants attended more therapies. Moreover, they were discharged regularly more frequently and they had lower scores on the HoNOS at discharge, indicating less problems and impairment of functioning than drop-outs.

Insert table 1 about here.

For the purpose of comparison, two samples were constituted: Sample 1 (T1) consists of participants who were hospitalized on the study unit during the implementation of structural components and before staff education, i.e., between September 2011 and January 2012 (N=34); Sample 2 (T2) consists of participants who were hospitalized on the study unit after staff education and before follow-up training, i.e., between May and October 2012 (N=29). Participants hospitalized between both periods were excluded from the analyses in order to achieve samples that represent the clinical population on the unit in two distinct periods of time (N=9). Furthermore, participants who stayed only for crisis intervention, i.e., less than one week, were omitted (N=9). In total 18 participants were not included in the analyses.

Results

Sociodemographic and clinical parameters of the Samples T1 and T2 are depicted in Table 2. No differences concerning sociodemographic variables between samples were found. In particular, the length of stay of the participants did not increase. However, owing to the

selection bias with significantly longer hospitalizations in participants compared to hospitalizations of those who declined participation, it seems reasonable to consider the total length of stay of all patients treated on the study unit. According to administrative data, the mean length of stay on the unit was 28 days in 2010 (N=196), 25 days in 2011 (N=220), and 25 days in 2012 (N=215). The only statistically significant differences in clinical variables are related to therapies attended by participants. It appears that individuals of Sample T2 participate in occupational therapy less frequently than they do in Sample T1.

Insert table 2 about here.

Subjective and functional variables by sample are shown in Table 3. Contrary to the hypothesis, most of the subjective outcome parameters did not change in the course of the project. Only the RPI showed higher scores in Sample T2. Regarding RAQ items, there was an improvement in two of them as, well as a decrease in two other items. “All people with serious mental illness can strive for recovery” ($p<0.05$) and “Recovering from mental illness is possible, no matter what you think may cause it” ($p<0.1$) had higher scores in Sample T2. On the other hand, in the items “To recover requires faith” ($p<0.05$) and “People differ in the way they recover from mental illness” ($p<0.1$), scores in Sample T1 were lower than those in Sample T2. These two items had rather high scores at T1, indicating that almost all participants agreed in the first place.

Another finding is that participants of Sample T2 showed higher improvements in functioning during hospitalization and lower scores on HoNOS at discharge.

Insert table 3 about here.

Discussion

This study aimed at evaluating a clinical project intended to support the recovery process of inpatients on an acute psychiatric unit. The staff training focused on improvement in communication, therapeutic relationship, and fostering self-help (31). The structural reorganization aimed at enhancing transparency and patient involvement. Owing to the naturalistic observational study design, the results of the evaluation and the conclusions drawn must be handled with care.

The hypothesis that several subjective parameters would be rated higher after the structural alterations and staff training can only partially be confirmed. There was no improvement observed in most subjective variables, particularly treatment satisfaction, quality of life, perceived autonomy (reciprocal to perceived coercion), therapeutic relationship, and hope. On the other hand, recovery-specific measures increased during the course of the project. This is in line with previous research on the effect of general and specific recovery-oriented staff trainings on recovery attitudes (17, 32). The controversial changes in the assessment of some of the RAQ items might be partially explained by reasoning with regard to content. The increase in scores of two items suggests that patients acquired awareness that recovery is possible as opposed to potentially pre-existing resigned attitudes. The decrease in two other items might be interpreted as gain of contemplation about courses of illness and control about one's own life despite mental illness, in the sense that faith, although a necessary precondition, would not be sufficient to recover. These observations might indicate that transference of the idea of recovery on an acute psychiatric unit is possible and measurable in patients. However, owing to the multidimensional intervention, including recovery training and structural changes, it is not clear what may have been the cause of this result. Moreover, the changes in RAQ items must be statistically regarded as a trend (p-values between 0.04 and 0.1) that limits the informative value of this result. According to previous publications the

necessary shift for the implementation of recovery-orientation in an institution is only partly procedural or structural. It also requires a cultural change on the part of professionals involving beliefs, ethics, and attitudes (33). To achieve a sustained effect of the recovery idea in daily routine structures, continuous reflection of the therapeutic attitude and a follow-up investigation would be necessary (17). Reasons for the stability of the other subjective parameters evaluated might be up to comparatively high scores at baseline, and the unspecific alterations that targeted basically on knowledge on the recovery concept and its implementation within the therapeutic working alliance (32). The high scores at baseline indicate a high quality of person-centred care on the study unit in the first place. However, the possibility must be considered that the structural changes and the staff training actually had little observable effect on patient outcomes.

Surprisingly, functioning according to HoNOS was better and improvement during hospitalization was higher in the subsample after the intervention. There is no obvious explanation for this unforeseen observation. Next to numerous possible confounding variables, an intensified individual therapeutic relationship and the structured treatment planning could have led to more goal-oriented actions (34). Also, the time spent by staff individually with patients might have increased (owing to project-related reduced staff meetings). This in itself might explain improvement in functional outcome. Unfortunately, the time spent with patients was not registered. To date, there is no evidence on how recovery-oriented services affect clinical and functional remission, if they have any effect at all (35, 36).

The length of stay remained stable at 25 days. However, drop-out analysis revealed that study participants stayed considerably longer than did those who declined participation. This might imply a selection bias, in the sense that participants were more highly motivated, they already held recovery-compatible attitudes, and they were, therefore, able to benefit from the project to a greater extent compared to non-participants, as discussed above.

One incidental finding of the observational study is that individuals who did participate in the interview differed substantially concerning multiple variables from individuals who met the inclusion criteria, but who declined to participate. Although the general attitude of patients towards psychiatric research is positive (37), the present sample consists of only half of the eligible individuals. Patients who agreed to participate were more likely to be female, to have a longer duration of stay, to attend more therapies and to be discharged regularly, rather than to be transferred to another unit or to leave the clinic against physician's advice. Additionally, participants had fewer problems and functional impairment at discharge. These findings might indicate that participants were more motivated to change and were more engaged in treatment, possibly leading to better outcome and, consecutively, to more positive views towards their hospitalization in general and the concept of recovery in particular. The interpretation of the present study results would be limited to a subpopulation that is engaged in service use more intensely than just short-stay crisis intervention. Former experience with psychiatric services, however, did not differ between participants and dropouts.

Moreover, there was a trend to a different diagnostic spectrum, with more participants diagnosed with affective, neurotic or personality disorders and fewer with schizophrenia. Residual negative symptoms, thought disorders and cognitive impairment associated with psychosis could explain this observation, according to previous research (38, 39). Also, it is in line with the present finding of higher HoNOS scores at discharge in non-participants.

In addition to this participation bias, there are more limitations of the present study to be mentioned. The low participation rate, together with the limited number of admissions (owing to the restriction to one study unit, and a study period of one year) indicate a small sample size that may be associated with lack of statistical power. Moreover, the clinical project was complex, multidimensional, unspecific and inherent to available and pre-existing structures. Hence, it cannot be regarded as a clearly defined clinical intervention, but rather as a process of development of a multiprofessional team. It is not known to what amount staff

adhered to the methods suggested in their education about recovery. It is well known that to change the culture in a workplace takes education, time and training and some people adjust more easily to changes than others. In this study, it can only be assumed that staff actually did make recovery- oriented changes in their everyday contact with patients. An experimental design with control group was not feasible or reasonable and the evaluation was set up as an observational study. For this reason, the results are not transferable to other treatment contexts. However, the real-life setting supports the strength of the study, as it sheds light on the subjective perspectives of seriously ill patients during varying changes in treatment conditions in acute inpatient settings.

Conclusion

This project included modification of the organizational framework and training of multiprofessional staff with the intention of fostering recovery-oriented practice on an acute psychiatric unit. The results suggest that it may have had an impact on knowledge and attitudes of patients concerning the recovery concept as a personal process. Other subjective measures, such as treatment satisfaction, quality of life, perceived autonomy, therapeutic relationship, and hope, had high scores at baseline and did not change during the project. After the project, functional outcome of patients improved to a greater extent, possibly as an effect of more goal-centred treatment planning or because of unknown confounding variables. Taking into consideration a number of limitations, including a selection bias, this naturalistic observational study implies that the introduction of recovery-related concepts in combination with structural reorganization, as described above, is feasible and perceptible, at least in patients' attitudes towards recovery and in their self-assessed recovery process.

Declaration of interest: The authors report no conflicts of interest. The authors are solely responsible for the content and writing of the paper.

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Table 1: Sociodemographic and clinical characteristics of participants and drop-outs

Variable	**Participants (*n* = 81)**		**Drop-outs (*n* = 64)**		**Chi^2- Test T-Test***		
	n Mean*	% SD*	*n* Mean*	% SD*	Chi^2 T*	df	p
Age*	38.6	11.7	41.3	11.8	1.36	143	0.176
Female	47	58	23	36	6.99	1	0.008
Compulsory admission	36	44	35	55	1.50	1	0.221
Previous hospitalizations*	3.8	7.0	4.6	7.6	MWU		0.479
Number of diagnoses*	1.9	0.9	1.9	0.9	-0.07	143	0.947
Primary diagnosis					10.49	5	0.063
organic disorder	0	0	3	5			
substance-related disorder	22	27	16	25			
schizophrenic disorder	22	27	28	44			
affective disorder	20	25	10	16			
neurotic disorder	8	10	4	6			
personality disorder	9	11	3	5			
Duration of stay (days)*	32	29.4	23	23.9	MWU		0.007
Regular discharge	68	84	44	69	13.44	2	0.001
Number of therapies*	3.0	1.3	2.4	1.4	-2.77	143	0.006
HoNOS admission	1.7	0.6	1.8	0.5	1.21	1	0.274
HoNOS discharge	0.9	0.4	1.2	0.6	16.12	1	<0.001

*Mean, SD (standard deviation), T-Test where indicated, MWU: Mann-Whitney-U-Test

Table 2: Sociodemographic and clinical characteristics of the samples

Variable	**Sample T1 (*n* = 34)**		**Sample T2 (*n* = 29)**		**Chi^2- Test T-Test***		
	n Mean*	% SD*	*n* Mean*	% SD*	Chi^2 T*	df	p
Age*	37.0	12.2	38.1	12.6	-0.34	61	0.734
Female	18	53	17	59	0.20	1	0.651
Compulsory admission	13	38	15	52	1.15	1	0.283
Previous hospitalizations*	4.3	8.2	4.2	7.3	MWU		0.781
Number of diagnoses*	2.1	1.0	1.8	1.0	0.89	61	0.375
Primary diagnosis					3.32	4	0.505
substance-related disorder	6	18	9	31			
schizophrenic disorder	13	38	7	24			
affective disorder	9	26	6	21			
neurotic disorder	3	9	2	7			
personality disorder	3	9	5	17			
Duration of stay (days)*	39.5	35.2	35.0	24.0	MWU		0.815
Regular discharge	31	91	24	83	2.80	2	0.247
Number of therapies*	3.2	1.2	3.3	1.0	-0.15	61	0.883
Therapies applied							
Physical therapy	22	65	23	79	1.64	1	0.201
Occupational therapy	27	79	16	55	4.24	1	0.039
Vocational therapy	6	18	11	38	3.27	1	0.071
Social work	24	71	18	62	0.51	1	0.475
Psychopharmacology	31	91	27	93	0.08	1	0.778

*Mean, SD (standard deviation), T-Test where indicated, MWU: Mann-Whitney-U-Test

Table 3: Subjective and functional parameters by sample

Variable	**Sample T1 (*n* = 34)**		**Sample T2 (*n* = 29)**		**T-Test**		
	Mean	SD	Mean	SD	T	df	p
Problems and Functioning							
HoNOS at admission	1.6	0.7	1.8	0.5	-1.54	57	0.130
HoNOS at discharge	1.0	0.4	0.7	0.4	2.40	56	0.020
HoNOS difference	0.6	0.7	1.1	0.4	-3.24	56	0.003
Subjective Outcome							
CSQ – satisfaction	2.2	0.5	2.3	0.5	-0.70	61	0.489
MANSA – quality of life	3.3	1.1	3.3	1.2	-0.23	60	0.820
AES – perceived coercion	3.3	0.5	3.3	0.7	-0.19	54	0.848
STAR – therapeutic relation							
physician	2.9	0.7	3.1	0.7	-0.88	60	0.381
nurse	2.7	0.7	2.9	0.7	-1.51	57	0.138
IHS – hope	3.2	0.8	3.4	0.8	-0.86	61	0.393
RPI – recovery process	2.4	0.6	2.8	0.6	-2.21	59	0.031
RAQ – recovery attitudes							
1. People in recovery sometimes have Setbacks.	3.4	0.8	3.2	1.0	0.88	60	0.383
2. To recover requires faith.	3.7	0.5	3.3	1.0	2.08	60	0.042
3. Stigma associated with mental illness can slow down the recovery process.	2.8	1.1	2.5	1.3	0.83	57	0.409
4. Recovery can occur, even if symptoms of mental illness are present.	2.6	0.9	2.9	1.2	-1.05	59	0.300
5. Recovering from mental illness is Possible, no matter what you think may cause it.	2.4	1.1	3.0	1.1	-1.96	60	0.055
6. All people with serious mental illnesses can strive for recovery.	2.7	1.3	3.3	0.8	-2.09	59	0.041
7. People differ in the way they recover from mental illness.	3.6	0.5	3.2	1.2	1.72	60	0.091